REMARKS

Applicant respectfully requests reconsideration of this application, and reconsideration of the Office Action dated January 23, 2003 (Paper No. 19). Upon entry of this Amendment, claims 12-41 will remain pending in this application. The amendments to claims 14, 25, 27, 30, and 32 correct informalities pointed out by the Examiner in the last Office Action and are fully supported by the specification and original claims. Applicant has also amended previously withdrawn claim 31 to depend from claim 33. Hence rejoinder of claim 31 is respectfully requested. No new matter is incorporated by this Amendment. Furthermore, the amendments to the claims are in no way intended to narrow the scope of the claims.

Enclosed is an Information Disclosure Statement which cited references made of record by the Examiner in co-pending application no. 09/674,041.

Applicant gratefully acknowledges that Examiner's indication that claims 17, 19-21, 24, 32, and 38 contain allowable subject matter. While claims 17, 19-21, 24, 32, and 38 were objected to, the Examiner indicated that these claims would be allowable if rewritten in independent form and including all of the elements of the base claim and any intervening claims. As an initial matter, Applicant respectfully notes that claim 32 is currently in independent form. Furthermore, Applicant has amended claim 32 to correct the informality noted by the Examiner in the last Office Action. Accordingly, it is believed that claim 32 is allowable in its present amended state.

With respect to claims 17, 19-21, 24, and 38, Applicant respectfully submits that, as discussed below, the claims from which claims 17, 19-21, 24, and 38 depend are also free of the prior art and thus also allowable in their current state.

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In the Office Action it was asserted that the specification failed to contain antecedent basis for the phrase "further comprising a means for maintaining said recesses and said apertures in alignment. Hence, the specification was objected to. Applicant respectfully traverses.

In response, Applicant kindly directs the Examiner's attention to page 2 of the instant specification beginning at the sixth paragraph which states, "It is preferred that means are provided for ensuring that said recesses and said apertures are maintained in axial alignment." Accordingly, the feature recited in claim 22 has literal support, and thus proper antecedent basis, in the specification. Furthermore, an example of such means is shown as reference numbers 25 and 26 shown in Figures 2 and 4 and discussed on page 5, lines 18 and 19. In view of the above remarks, it is respectfully asserted that the objection is overcome. Reconsideration and withdrawal of the objection are requested.

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The drawings are also objected to for not showing every feature of the claimed invention. The Office Action asserted that the figures do not show the "means for maintaining the recesses and apertures in alignment." Applicant respectfully traverses.

As explained above, an example of a "means for maintaining the recesses and apertures in alignment" is shown as reference numbers 25 and 26 shown in Figures 2 and 4 and discussed on page 5, lines 18 and 19. Hence, Applicant also respectfully asserts that this objection is overcome, Reconsideration and withdrawal of the objection are requested.

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Claims 14, 25, 27, 30 and 32 were objected to because of informalities. In response, each of claims 14, 25, 27, 30, and 32 have been amended as suggested by the

Examiner. Hence, the objection is overcome and its withdrawal is respectfully requested. Furthermore, Applicant again asserts that the changes to claims 14, 25, 27, 30 and 32 do not effect the scope of these claims.

* * *

Claims 12-16, 18, 22, 23, 25-30, 33, 34, and 36-41 are rejected under 35 U.S.C. § 103(a) as being obvious based on Morrick (U.S. Pat. No. 5,389,252). Applicant respectfully traverses.

Applicant's disclosed invention concerns a device for filtering ferromagnetic material from a fluid in which the material is suspended, a filtering method which employs the device, and method of making the device. The device includes a magnet and a pair of metal plates. The magnet has faces of opposite magnetic polarity and each of the plates are disposed in abutment (e.g., magnetically connected) with a respective one of the magnet faces. Each plate includes a plurality of recesses about an outer perimeter of the plate to form radially extending magnetic pole pieces, which extend beyond an outer perimeter of the magnet faces. Moreover, the plates are oriented so that the recesses and pole pieces on a first one of the plates are aligned with the recesses and pole pieces on the second of the plates. Furthermore, opposed recesses on the first and second plates define passage means for the fluid and the opposed pole pieces on the first and second plates define regions to which ferromagnetic material is attracted and retained.

In the Office Action it was asserted,

> **Although Morrick does not explicitly disclose (since the second plate 26 is not shown in any figures but actually disclosed that a second plate 26 exists in col. 3, lines 55-59 by the disclosure 'metal (disk/plate 26) on both sides of the magnet (24))' that the recesses and pole pieces f the first and second plates (26) being oriented such that they are aligned with respect to each other, it is considered obvious to one of ordinary skill in the art t arrange them in that manner for the simplest design choice in order to allow continuous flow through the recesses of the first and second plates and attraction of ferromagnetic material from the fluid.**

Applicant respectfully submits that the above statement represents an inaccurate interpretation of the teachings and Figures of Morrick. Throughout the specification of Morrick, reference is made to only one particle-collecting disk. Moreover, each figure also shows only a single particle-collecting disk. Nowhere in the specification is it even suggested that the device of Morrick includes two particle-collecting disks.

To support the above assertion, the Office Action points to column 3, lines 55-59 of Morrick. Column 3, lines 54-59 state:

> **Using simple tests of magnetic strength, it is possible to demonstrate that the apparent force of the magnet is increased when the disk 26 is present, and is further increased when the magnet/disk combination is placed on the oil filter, i.e. with metal on both sides of the magnet. (emphasis added)**

The Office Action asserts that the wording "metal on both sides of the magnet" indicates the presence of two particle-collecting disks. Applicant respectfully disagrees with this interpretation. When the passage is read as a whole, a person of ordinary skill in the art would interpret the wording "metal on both sides of the magnet" as referencing the disk 26 on one side of the magnet and the filter cover plate (which is made of metal) on the opposite side of the magnet. This is clear from the statements that "the apparent force of the magnet is increased when the disk 26 is present" and (the apparent force of the magnet) "is further increased when the magnet/disk combination is placed on the oil filter, i.e. with metal on both sides of the magnet." Thus, it would have been clear to those of ordinary skill in the art that the passage which is relied on by the Office Action refers to the particle collecting disk 26 on one side of the magnet and the metal filter cover plate 4 on the opposite side of the magnet when the "magnet/disk combination is placed on the oil filter." (Note also that this disclosure in Morrick contradicts the assertion made in paragraph 16 of the Office Action, regarding claim 18, as to the distribution plate 4 of being made of non-ferromagnetic material.)

In the Office Action is was further asserted that, based on *In re Harza,* "a mere duplication of parts (in this instance duplication of the metal plates from one to two) for a multiplied effect ... does not carry any patentable weight of significance unless a new or unexpected result is produced." In response, Applicant respectfully asserts that in the present invention, the two plates are not identical. Thus, the reasoning of *In re Harza,* which is concerned with multiple identical ribs, does not apply to the present claims. In the present invention, each of the two plates are placed to opposite sides of the magnet and therefore the opposite sides of the magnet are of opposite polarity. Thus, the two plates cannot be considered to be a mere duplication of a single plate as they have different qualities relative to each other. Moreover, in Col. 3, lines 26-30, Morrick describes the benefits of creating a turbulence flow with its collection disk. Thus, along this line of disclosure, even if one were to assume arguendo the presence of a "duplicate" disk in Morrick, there is disclosure in Morrick that suggests a non-aligned or turbulence promoting arrangement would be the choice of placement (it being further noted that the assertion raised in the Office Action as to the motivation for aligning the recesses to allow "continuous flow of fluid through the recesses" is contrary to the turbulence disclosure in Morrick).

It is also respectfully submitted that the use of two plates in the present invention with the recesses and pole pieces on the two plates being aligned does indeed provide both a new and unexpected effect or result. The disk of Morrick works in a very different way from the present invention. Morrick teaches, "the magnetized particle-collecting disk 26 ... provides a large magnetic surface on which the contaminating particles may settle." *See Column3, Lines 26-30.* The present invention achieves the exact opposite effect. In particular, because in the present invention the recesses and pole pieces on the two plates

are aligned to define passage means for the fluid and collection regions for the particles. In other words, the aim of Morrick's device is to provide a larger surface area for collecting magnetizable material. In contrast, in the present invention, the pole pieces on the two plates are aligned to define regions to which the ferromagnetic material is attracted and retained and thereby to define passage means for the fluid. In this way, the magnetizable material is preferentially collected in specific regions which ensures that there is always a clear passage for the flow of fluid as long as the capacity of the device (with respect to magnetizable material) is not exceeded.

Applicant respectfully submits that, as discussed above, Morrick fails to teach each and every feature of the claimed invention. Moreover, there is nothing in the teachings of Morrick which would motivate those of ordinary skill in the art to modify the teachings of Morrick by to arrive at the claimed invention. Hence, in the view of the above remarks, Applicants respectfully submit that the rejection is overcome relative to the above discussion directed at the independent claims and the claims depending from the allowable independent claims. Reconsideration and withdrawal of the rejection are respectfully requested.

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Applicant respectfully submits that this Amendment and the above remarks obviate the outstanding objections and rejection in this case, thereby placing the application in condition for immediate allowance. Allowance of this application is earnestly solicited.

If any fees under 37 CFR §§1.16 or 1.17 are due in connection with this filing, please charge the fees to Deposit Account No. 02-4300; Order No. 033988.003.

If an extension of time under 37 CFR § 1.136 is necessary that is not accounted for in the papers filed herewith, such an extension is requested. The extension fee should be charged to Deposit Account No. 02-4300; Order No. 033988.003.

Respectfully submitted,

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LISTING OF CLAIMS

Claims 1-11 (cancelled)

Claim 12 (previously added): A device for filtering ferromagnetic material from a fluid in which said material is suspended, comprising a magnet and a pair of metal plates, said magnet having faces of opposite magnetic polarity, each of said plates being disposed in abutment with a respective one of said magnet faces, each of said plates comprising a plurality of recesses about an outer perimeter of the plate to form radially extending magnetic pole pieces, which extend beyond an outer perimeter of said magnet faces, said plates being oriented so that said recesses and pole pieces on a first one of said plates are aligned with said recesses and pole pieces on the second of said plates, wherein opposed recesses on said first and second plates define passage means for said fluid and wherein opposed said pole pieces on said first and second plates define regions to which ferromagnetic material is attracted and retained.

Claim 13 (previously added): A device as claimed in claim 12, wherein said opposed recesses on said first and second plates also define regions from which ferromagnetic material is repelled.

Claim 14 (currently amended): A device as claimed in claim 12, wherein said magnet and said metal plates are each provided with a central hole which is adapted to ~~received~~ receive a tube through which fluid can pass, said tube providing means for isolating, within the device, fluid passage in said tube from fluid flow through said recesses.

Claim 15 (previously added): A device as claimed in claim 12, further comprising a distribution plate having a plurality of apertures which are alignable with said recesses, said apertures being the only passage means of fluid to said metal plates.

Claim 16 (previously added): A device as claimed in claim 15, wherein said distribution plate, said magnet and said metal plates are each provided with a central hole which is adapted to receive a tube through which fluid can pass, said tube providing means for isolating, within the device, fluid passage in said tube from fluid flow through said recesses.

Claim 17 (previously added): A device as claimed in claim 16, wherein an outer face of said tube is provided with a recess which can receive retaining means which is able to keep said distribution plate in abutment with an axially closer of said metal plates.

Claim 18 (previously added): A device as claimed in claim 12, wherein the distribution plate is made of a non-ferromagnetic material.

Claim 19 (previously added): A device as claimed in claim 12, wherein each of said recesses is further provided with one or a plurality of slots.

Claim 20 (previously added): A device as claimed in claim 12, wherein an outer edge of each of said pole pieces is further provided with one or a plurality of slots.

Claim 21 (previously added): A device as claimed in claim 12, wherein the outer edges of said facing pole pieces are curved towards one another.

Claim 22 (previously added): A device as claimed in claim 12, further comprising means for maintaining said recesses and said apertures in alignment.

Claim 23 (previously added): A device as claimed in claim 12, wherein said magnet comprises a material which will generate a magnetic field between said metal plates of sufficient strength to attract ferromagnetic material from fluid passing therebetween.

Claim 24 (previously added): A device as claimed in claim 12, wherein the metal plate which is impinged first by fluid flow through the device is thicker than said other metal plate through which said fluid leaves the device.

Claim 25 (currently amended): A device as claimed in claim 12, further comprising a housing having means at one end for receipt by a containing means of said fluid, said containing means comprising an input means and an output means, said housing having means at the other end to receive a fluid filter, an output of which fluid filter is continuous with a fluid passageway passing through an aperture in said magnet and also continuous with the input means to said containing means, said output means from said containing means being continuous [with said apertures] in said recesses in said metal plates.

Claim 26 (previously added): A device as claimed in claim 15, further comprising a housing having means at one end for receipt by a containing means of said fluid, said

containing means comprising an input means and an output means, said housing having means at the other end to receive a fluid filter, an output of which filter in continuous with a tube extending through an aperture in said magnet and also continuous with the input means to said containing means, said output means from said containing means being continuous with said apertures in said distribution plate and said recesses in said metal plates.

Claim 27 (currently amended): A magnetic filter device for filtering ferromagnetic material from a fluid in which said material is suspended, comprising a fluid filter, a magnet and a pair of metal plates, said magnet having faces of opposite magnetic polarity, each of said plates being disposed in abutment with a respective one of said magnet faces, each of said plates comprising a plurality of recesses about an outer perimeter of the plate to form radially extending magnetic pole pieces, which extend beyond an outer perimeter of said magnet faces, said plates being oriented so that said recesses and pole pieces on a first of said plates are aligned with said recesses and pole pieces on the second of said plates, wherein opposed recesses on said ~~firsts~~ first and second plates define passage means for said fluid, and wherein said opposed pole pieces on said first and second plates define regions to which ferromagnetic material is attracted and retained, said filter having passage means for said fluid which is continuous with fluid passage through said recesses.

Claim 28 (previously added): A magnetic filter device as claimed in claim 27, wherein said opposed recesses on said first and second plates also define regions from which ferromagnetic material is repelled.

Claim 29 (previously added): A magnetic filter device as claimed in claim 27, wherein said fluid filter is positioned downstream of said magnet and said second pair of metal plates.

Claim 30 (currently amended): A process for filtering ferromagnetic material from a fluid in which said material is suspended, comprising passing said fluid through a device ~~comprising a device~~ for filtering ferromagnetic material from a fluid in which said material is suspended, comprising a magnet and a pair of metal plates, said magnet having faces of opposite magnetic polarity, each of said plates being disposed in abutment with a respective one of said magnet faces, each of said plates comprising a plurality of recesses about an outer ~~premiere~~ perimeter of the plate to form radially extending magnetic pole pieces, which extend beyond an outer perimeter of said magnet faces, said plates being oriented so that said recesses and pole pieces on a first one of said plates are aligned with said recesses and pole pieces on the second of said plates, wherein opposed recesses on said first and second plates define passage means for said fluid and wherein opposed said pole pieces on said first and second plates define regions to which ferromagnetic material is attracted and retained.

Claim 31 (withdrawn-currently amended): A process for filtering ferromagnetic material from a fluid in which said material is suspended, comprising passing said fluid through ~~a~~ the device recited in claim 33. ~~comprising a housing having means at one end for receipt by a containing means of said fluid, said containing means comprising an input means and an output means, said housing having means at the other end to receive a fluid filter, an output of which filter is continuous with a tube in a magnetic filer device and also~~

~~continuous with the input means to said containing means, said output means from said containing means being continuous with said apertures in said distribution plate and said recesses in said metal plates.~~

Claim 32 (currently amended): A device for filtering ferromagnetic material from a fluid in which said material is suspended, comprises a magnet and a pair of metal plates, said magnet having faces of opposite magnetic polarity, said plates being disposed in abutment with said faces respectively, each plate having a plurality of recesses about an outer perimeter of each plate to form radially extending magnetic pole pieces, which extend beyond an outer perimeter of the magnet faces, said plates being oriented so that the recesses and pole pieces on one plate are axially aligned with those recesses and pole pieces on the other plate, wherein axially opposite recesses define passage ~~mans~~ means for said fluid and also regions from which ferromagnetic material is repelled, and wherein said pole pieces define regions to which ferromagnetic material is attracted and retained, said device being further provided with a distribution plate having a plurality of apertures which are axially alignable with said recesses, said apertures being the only passage means of fluid to said metal plates, wherein the distribution plate, the magnet and said metal plates are each provided with an aperture which is adapted to receive a tube through which fluid can pass, said tube providing means for isolating, within the device, fluid passage in the tube from fluid flow through the recesses, and wherein each recess and an outer edge of each pole piece is further provided with one or a plurality of slots.

Claim 33 (previously added): A device for filtering ferromagnetic material from a fluid in which said material is suspended, comprising:

a magnet having a first face and a second face with said faces being of opposite magnetic polarity;

a first plate magnetically fixed to the first face of said magnet;

a second plate magnetically fixed to said second face of said magnet,

said first plate having a plurality of recesses about an outer perimeter of said plate to form radially extending pole pieces which extend beyond an outer perimeter of the first face of said magnet;

said second plate having a plurality of recesses about an outer perimeter of said plate to form radially extending pole pieces which extend beyond an outer perimeter of the second face of said magnet;

said first and second plates being arranged so that said recesses and pole pieces of said first pate are aligned with respective recesses and pole pieces of said second plate, and wherein opposed recesses on said first and second plates define passages for said fluid and wherein opposite pole pieces on said first and second plates define regions to which said ferromagnetic material is attracted and retained.

Claim 34 (previously added): The device as recited in claim 33 wherein the recesses in each of said first and second plates open out at spaced intervals about a peripheral edge of respective plates.

Claim 35 (previously added): The device as recited in claims 33 wherein said pole pieces have formed therein radial slots.

Claim 36 (previously added): The device as recited in claim 33 wherein said recesses in said first and second plates are of a common configuration.

Claim 37 (previously added): The device as recited in claim 36 wherein the pole pieces of said first and second plates are of a common configuration.

Claim 38 (previously added): The device as recited in claim 33 wherein the pole pieces of said first and second plates are of a common configuration.

Claim 39 (previously added):The device as recited in claim 33 wherein said metal plates are releasably fixed to said magnet and in direct contact with said magnet.

Claim 40 (previously added): A method of filtering ferromagnetic material from a fluid in which said material is present comprising passing said material through the device of claim 34.

Claim 41 (previously added): A method of assembling the device of claim 34 comprising fixing said first and second plates to said magnet.